GENETICS

A PERIODICAL RECORD OF INVESTIGATIONS
BEARING ON HEREDITY AND VARIATION

Founded in 1916
by
GEORGE H. SHULL
with the cooperation of

WILLIAM E. CASTLE
EDWIN G. CONKLIN
CHARLES B. DAVENPORT
BRADLEY M. DAVIS
EDWARD M. EAST
ROLLINS A. EMERSON
HERBERT S. JENNINGS
THOMAS H. MORGAN
RAYMOND PEARL

VOLUME 56—MAY-AUGUST 1967

GENETICS VOLUME 56, MAY–AUGUST 1967

EDITORIAL BOARD

DAVID D. PERKINS, *Editor*

Department of Biological Sciences
Stanford University
Stanford, California

F. CLARKE FRASER
McGill University

GUNTHER S. STENT
University of California, Berkeley

JAY L. LUSH
Iowa State University

E. L. TATUM
The Rockefeller Institute

JACK SCHULTZ
Institute for Cancer Research, Philadelphia

J. HERBERT TAYLOR
Florida State University

Editorial Assistant, June A. Tatum

Business Manager, C. H. Eads

PUBLISHED AT AUSTIN TEXAS

by the Genetics Society of America

Printed at the University of Texas Printing Division, Austin

AUTHOR INDEX to Volume 56

May–August 1967

Authors' names are listed in strictly alphabetical order, with all prefixes treated as integral parts of the name. (The Table of Contents is also arranged alphabetically by the first author.) Pages 541-599 contain Abstracts; these page numbers are in italics in the Index.

ABE, M., *566*
ABPLANALP, H., *573*
ADLER, H. I., *550*
ADLER, J., 363
AHMED, S. I., *541*
ALEXANDER, M. L., 273
ALFORD, C. F., *572*
ALLAN, J., *598*
ALLEN, A. C., *566*
ALLISON, D. P., *550*
AMATO, R. S., *541*
AMES, B. N., *559*
ANDERSON, I. C., *584*
ANDERSON, V. L., 215
APIRION, D., *542*
ARMSTRONG, F. B., 463
ARMSTRONG, J. B., 363
ARNHEIM, N. JR., 253
ASHTON, G. C., 353
AYALA, F. J., *542*

BACHMANN, M. D., *584*
BALSLEY, M., 125, *543*
BAND, H. T., *543*
BARRATT, R. W., *596*
BATES, W. K., *543*
BEAM, C. A., *544*
BECCARI, E., *7*
BECKER, W. A., *545*
BELL, A. E., 633
BENSON, D. F., *594*
BERG, C. M., 503
BERNSTEIN, H., *544*, 755
BHATIA, C. R., *544*
BINGHAM, R. T., *545*
BINNARD, B. M., *575*
BLEYMAN, L. K., 49
BLINKOVA, A. A., 105
BOGYO, T. P., *545*
BOWMAN, J. T., *589*
BRADLEY, B. P., *545*
BRAUN, W., *558*
BRAY, D. F., *546*
BRESLER, S. E., 105, 117
BRIGGS, R. W., *546*
BRIMER, P., *550*
BROSSEAU, G. E., JR., *547*
BRUMBAUGH, J. A., *547*
BULLER, C. S., *567*
BUNN, P. A., JR., *565*
BURDETTE, W. J., *547*
BURNET, B., 743
BURNS, J. A., 483
BUSS, E. G., *727*

CANNINGS, C., 613
CARLSON, E. A., s23
CASE, M. E., *541*, *548*
CASSADY, W. E., *548*
CASSIDY, J. D., *548*
CENTER, E. M., *554*
CHAKRABARTY, A. M., *549*
CHALMERS, J. H., JR., 413
CHANG, L.-T., *593*, 801
CHATTERJEE, N. K., *549*
CHEN, S., 425
CHO, S. S., *598*
CHOVNICK, A., *559*, *565*
CHU, E. H. Y., *550*
CLEMENT, W. M., *550*
COCKERHAM, C. C., 89
COHEN, A., *550*
COLLINS, J., *561*
COLLINS, R. L., *551*, *560*
COMSTOCK, R. E., *545*, *563*
CONGLETON, C., *597*
CONNER, G. W., *551*
COOCH, F. G., *552*
COOKE, F., *552*
COSTANTINO, R. F., *552*
COULTER, D. M., *552*
COYLE, M. B., *553*
CRITTENDEN, L. B., *553*
CUMMING, R. B., *557*
CURTISS, R., III, 503, *550*, *553*

DANFORTH, C. H., *554*
DAVID, C. S., *579*
DAWSON, P. S., *554*
DAY, A., *592*
DEFRIES, J. C., *563*
DELAND, M., *565*
DE LEEUW, A., *554*
DEMEREC, M., 341
DEMOSS, J. A., 413
DE SERRES, F. J., *555*, *575*
DEWEES, A. A., 633
DICKERMAN, R. C., *555*, *559*
DORN, G. L., *556*, 619
DRUGER, M., 39
DUCK, P., *592*
DUKE, E. J., *561*
DUTTA, S. K., *556*

EBERHART, B. M., *556*
EHLING, U. H., *557*
EISENSTARK, A., 341
EL-ERYANI, A. A., *557*
ERASMUS, U., *557*
ERICKSON, R., *558*

FABERGÉ, A. C., *558*
FAULHABER, S. H., 189
FEINSTEIN, R. W., *559*
FINGER, I., 793
FINK, G. R., *559*
FINNERTY, V., *559*
FISHER, C. R., *560*
FOGEL, S., *567*
FORSTHOEFEL, P. F., *560*
FREESE, E. B., *560*
FULLER, J. L., *560*
FUSCALDO, K. E., *561*

GALL, G. A. E., 215
GALLANT, J., *561*, *597*
GARBER, E. D., *596*
GARDNER, C. O., *549*
GARDNER, E. J., *583*

Gersh, E. S., 309
Gerstel, D. U., 483
Gifford, M., *543*
Giles, N. H., *541*, *548*
Gilmore, R. A., 641
Gilmour, D. G., 353
Glassman, E., *561*
Gowans, C. S., 405
Grahn, D., *559*
Gratzer, H. G., *562*
Green, M. M., 467
Grell, E. H., *562*
Grell, R. F., *562*
Griffin, P., *564*
Gunsalus, C. F., *549*
Gunsalus, I. C., *549*

Hall, J. C., *599*
Hassan, G. M., *563*
Hawthorne, D. C., *563*
Hayashi, S., *557*
Hayford, A. H., *598*
Hedrick, P. W., *563*
Hegmann, J. P., *563*
Heller, C., 793
Helling, R. B., *564*
Herman, A., *564*
Hess, O., 283
Hewitt, G. M., *588*
Hexter, W. M., *565*
Hochman, B., *565*
Holm, D. G., *565*
Holt, G. G., *580*
Hood, L., *586*
Hoogmoed, M. S., 709
Hotchkiss, R. D., *566*
Howard, P. N., *594*
Hsie, J., *566*
Huang, S. L., *566*
Hurst, D. D., *567*

Ives, P. T., *599*

Jaap, R. G., *567*
Jackson, D. M., *561*
Jackson, L. E., *567*
Jackson, R. W., 413
James, A. P., *568*
Joftes, D. L., *568*
Johnson, W. W., *568*
Judd, B. H., *569*

Kao, F. T., *582*
Kaplan, W. D., *569*, *587*
Kearsey, M. J., 23
Khattah, M., *570*
Khush, G. S., 297
Kidd, K. K., *570*
Kiddy, C. A., 353
King, R. C., *590*
Kinsey, J. A., *570*
Kitani, Y., *571*
Kleinberg, J. A., *589*
Knoder, E., *586*
Knox, W. E., 1
Kodani, M., *568*
Kojima, K., 23
Korch, C. T., *571*
Kristjansson, F. K., 353
Kyle, W. H., 215

Lacroute, F., 149
Lamb, B. C., *571*
Lane, D., *566*
Lanier, W. B., *593*
Lanzov, V. A., 105, 117
Larkin, D., 793
Lavappa, K. S., *572*
Law, C. N., 445
Lee, W. R., *572*
Levins, R., 163
Llanes, B., *572*
Lowry, D. C., *573*
Lozner, E. C., *565*
Lozzio, C. B., *573*
Lu, B. C., *574*

MacBean, I. T., 233
Maguire, M. P., *574*
Malich, C. W., *575*
Malina, M. M., *594*
Malling, H. V., *555*, *557*, *575*, *595*
Mandel, M., *556*
Marangu, J., *575*
Margulies, L., *576*
Marinkovic, D., 61
Marden, M. A., *545*
Martin, F. W., 391
Marzluf, G. A., *576*
Mays, J. A., *553*
McBride, J. C., 405
McCarron, M. Y., *561*
McFall, E., *572*
McReynolds, M. S., 527
Mericle, L. W., *576*
Mericle, R. P., *576*
Merriam, E. V., *550*
Merriam, J. R., *577*
Meuris, P., 149
Mikula, B. C., 733
Mitra, J., *541*
Mittler, S., *577*
Modigliani, P., *7*
Mohler, J. D., *578*
Moree, R., *578*
Morse, M. L., 331
Muhammed, A., *578*
Mukai, T., *579*
Mulcahy, D. L., *579*
Murpurgo, G., *7*

Newmeyer, D., *771*
Nishioka, Y., 341
Nordskog, A. W., *563*, *570*, *579*, *584*
North, D. T., *580*
Nur, 375

Oakberg, E. F., *580*
O'Donald, P., 399
Oftedal, P., *569*
Olive, L. S., *571*
Olsen, M. W., *727*
Olsen, R. J., *545*

Parsons, P. A., 233
Partridge, C. W. H., *541*, *548*
Perkins, D. D., *580*
Peterson, P. A., *581*
Phillips, R. B., 667, 683
Piechowski, M. M., 133
Pious, D. A., 601
Pipkin, S. B., *581*
Platz, R. D., *581*
Plescia, O. J., *558*
Prout, T., 659
Puck, T. T., *582*

Rai, K. S., *582*
Ramanis, Z., *585*
Ratnakumar, V. S., *582*
Ravin, A. W., *552*
Rayle, R. E., *583*
Read, C. P., *598*
Rédei, G. P., 431
Reissig, J. L., 321
Remondini, D. J., *583*
Renshaw, J., *553*
Richman, N., *556*
Rick, C. M., 297
Rinehart, R. R., *583*
Rishell, W. A., *584*

Roberts, D. W., *592*
Roberts, P. A., 179
Robertson, D. S., *584*
Rogler, J. C., 215
Roozen, K. J., *551*
Ross, M. D., *584*
Roth, J. R., *559*
Rotheim, M. B., *552*
Russell, L. B., *585*

Sacks, J. M., 705
Sager, R., *585*
Sampson, D. R., 241
Sand, S. A., *586*
Sanders, B. G., *586*
Sang, J. H., 743
Sarvella, P., *586*
Schalet, A., *559*, *587*
Scharloo, W., 709
Scheinberg, E., *546*, *588*
Schiff, R., *588*
Schlessinger, D., *542*
Schroeter, G. L., *588*
Scudo, F. M., 693
Seale, T. W., *586*
Seecof, R. L., *587*
Sega, G. A., *572*
Shankel, D. M., *567*, *589*
Shelton, E. E., *589*
Shinoda, T., *561*
Silver, S., *589*
Simmons, J. R., *589*
Singer, A. C., *590*
Singh, D., *567*
Sittmann, K., *590*
Slonimski, P. P., *149*
Smith, H. H., *586*
Smith, P. A., *590*
Smith, R. H., *591*
Snow, R., *571*, *591*
Sonnenschein, C., *592*
Stallions, D. R., *553*
Stebbins, G. L., *592*
Stormont, C., *588*
Strauss, B. S., *553*
Susman, M., 133
Sutton, H. E., 425, *594*
Suzuki, D. T., *557*, *592*

Taylor, C. W., 771
Terenzi, H. F., 321
ter Kuile, A., 709
Thompson, P. E., *592*
Thompson, S. R., 13
Ting, S. W., *545*
Touchberry, R. W., *590*
Tomes, M. L., 227
Traut, H., 265
Trosko, J. E., *578*
Tuveson, R. W., *593*, 801

Voelker, R. A., *593*
Vogt, P. K., *553*

Wagner, R. P., *548*, s21
Wagoner, D. E., *594*
Walker, C., *561*
Walker, S., *592*
Walsh, M. M., *577*
Walters, M. S., *594*
Wang, A. C., *594*
Webb, R. B., *594*
Webber, B. B., *595*
Weber, D. F., *595*
Weinstock, S., *567*
Weisbrot, D. R., *596*
West, D. J., *596*
West, N. B., *596*
Wilkins, A. S., *597*
Wilson, J. F., *597*
Wolfe, H. G., *581*
Wolff, G. L., *597*
Woodward, C. K., *598*
Woodward, V. W., *556*, *598*

Yamazaki, T., *592*
Yen, T. T., *598*
Yerganian, G., *598*
Yoon, J. S., *547*
Yost, H. T., *599*
Young, S. S. Y., *73*

SUBJECT INDEX to Volume 56

May–August 1967

Pages 541–599 contain Abstracts: these page numbers are italicized in the Index. Abstracts are indexed here only for organisms. Pages s1-s72 contain Genetics Society of America Proceedings, Directory, etc.

acridine, 9-amino, 133
allelism, lethals collected at different times, 659
α-aminobutyric acid, 215
antigen differences, Paramecium, 793
  rabbit cells, 601
  Tetrahymena, 667, 683
antigen loss by cells in culture, 601
Arabidopsis, 431, *549*
aromatic mutants, Salmonella, 341
Aspergillus nidulans, 7, *556*, *593*, 619
Aspergillus rugulosus, *593*

Bacillus subtilis, *558*, *560*
bacteriophage, *see* phage
barley, *544*
behavior, Drosophila, 233

carotene biosynthesis, 227
cattle, 353, 425, *570*
cell culture, 601
chicken, 353, *547*, *553*, *563*, *567*, *570*, *573*, *575*, *579*, *584*
Chlamydomonas, 405, *585*
chloroplast differentiation, 431
chromosome, lampbrush, 283
  polytene, 309
coccids, 375
Collinsia tinctoria, *582*
complementation, between alleles, Salmonella, 341 *E. coli*, 363
  Y-chromosome fractions, 283
computer simulation, 73, 163, 241
Coprinus, *574*
corn, *see* maize
crossing over, in inversion heterozygotes, Drosophila, 179
  mitotic, effect of FUDR and FU, Aspergillus, 7
  in UV-sensitive mutants, Neurospora, 801
cytoplasmic inheritance, Neurospora, 801
  Paramecium, 125

deficiency, Drosophila, 467
Demerec, M., s21
deoxycytidylate hydroxymethylase, *755*
development, and heat shock, Drosophila, 13
  phage, 133
  antigen, 683
Didymium iridis, *582*
differentiation, bristle, Drosophila, 253
Diplococcus pneumoniae, *566*
DNA-polymerase, *755*
dominance, 399
dosage, gene and symbiotic particles, paramecium, 125

Drosophila affinis, *593*
Drosophila hydei, 283
Drosophila melanogaster, 13, 23, 39, 179, 233, 253, 265, 273, 309, 467, *543*, *547*, *555*, *557*, *559*, *561*, *562*, *568*, *569*, *572*, *575*, *576*, *577*, *578*, *579*, *583*, *587*, *589*, *590*, *592*, *596*, *599*, 659, 709, 743
Drosophila nebulosa, *542*
Drosophila pellewae, *581*
Drosophila pseudoobscura, 61
Drosophila serrata, *542*
Drosophila simulans, 189
Drosophila virilis, 527
duplication, generated by pericentric inversions, 771

environmentally induced heritable change, 733
enzyme aggregate, 413
  differences, 353, 413, 527, phage, 755
  tryptophan pathway, 413
episomes, 503
Escherichia coli, 105, 117, 363, 503, *542*, *550*, *553*, *561*, *567*, *572*, *589*, *594*, *597*
esterase, 527
ethylenimine, 273
exconjugant heterozygosity in partial diploid bacteria, 117

F′ strains, haploid, *E. coli*, 503
fertility factors, *D. hydei*, 283
fitness, 23, 61,
  as function of gene frequency, 705
  in heterogeneous environment, 163
flagellum, *E. coli*, 363
fluorodeoxyuridine, 7
fluorouracil, 7

Garrod, A.E., 1
genetic load, 61
goat, 353
goose, lesser blue, *552*
grasshopper, *588*
growth control, Neurospora, 321
  mouse, 215

Habrobracon juglandis, *548*, *591*
hamster, *550*, *572*, *582*, *592*, *598*
Hansenula wingei, *564*
heterochromatic chromosome set, coccids, 375
heterochromatin, tobacco, 483
heterosis, 23
Hibiscus, *579*
horse, 353
house fly, *594*
human, *541*, *573*, *594*

hybrids, interspecific, coccid, 375
tobacco, 483
tomato, 391

inbreeding and coancestry, 89
incompatibility, self, Raphanus, 241
unilateral in tomato, 391
inhibited mutants, yeast, 149
instability, tobacco, 483
of polar mutant, *E. coli*, 331
interspecific hybrids, Salmonella, 463
inversions, and crossing over, 179
E. coli, 503
Neurospora, 771

kinetin, 431

Leonard, W. H., s22
Lilium longiflorum, *594*
linkage, genes with similar phenotypes, Tribolium, 633
linkage group, *Aspergillus nidulans*, 619
Tribolium castaneum, 633
Lycopersicon, *see* tomato
lysogenic bacteria, *581*

maize, *546*, *574*, *581*, *595*, 733
Aspergillus, 619
map, genetic, Salmonella, 463
Tribolium, 633
mating-type expression, Neurospora, 771
mating type, Paramecium, 49
mealy bug, 375
megachromosomes, tobacco, 483
meiotic drive, 189
metabolite inhibited mutants, yeast, 149
mitotic recombination, Neurospora, 771
M. lysodeikticus, *553*
modifiers, Neurospora, 321
monosomic analysis, tomato, 297
Mormoniella, *551*
mosaicism, Drosophila mutation, 273
and development, Drosophila, 253
motility, *E. coli*, 363
mouse, 215, *554*, *557*, *559*, *560*, *568*, *580*, *581*, *585*, *590*, *597*, *598*
Muller, H. J., s23
mutable gene, Drosophila, 467
mutation, at high rate, Drosophila, 467
chemically induced, 273
delayed, 273
effect on fitness, 163
mosaic, 273

Neurospora crassa, 321, 413, *541*, *543*, *548*, *555*, *556*, *557*, *560*, *562*, *570*, *575*, *580*, *586*, *593*, *595*, *596*, *597*, *598*, 771, 801
Nicotiana, *see* tobacco
nitrous acid, 149, 801
nonchromosomal inheritance: *see* cytoplasmic
nomenclature, protein polymorphism, 353

overdominance, 399

Paramecium aurelia, 49, 125, *543*, 793
paramutation and environment, maize, 733
parthenogenesis, turkey, *727*
penetrance, tumor, Drosophila, 743
pericentric inversions, 179, 771
phage, 133, *544*, *589*
Phaseolus, *596*
phenocopies, Drosophila, 13
P^{32} decay, 105
photoactivation, Neurospora, 801
pig, 353
pine, *545*
Planococcus, *375*
Plantago insularis, *592*
Plantago lanceolata, *584*
pneumococcus, *566*
pollen, compatibility, tomato, 391
polymorphism, 353, 399, *527*, 667
population, experimental, 39, 233, 709
natural, 61, 241
theoretical, 73, 89, 163, 241, 399, 613, 693, 705
protein, differences, 353, 425, 527
metabolism, mouse, 215
Pseudococcus, 375
Pseudomonas putida, *549*

quail, *590*
quantitative traits, 23, 215
genetic basis, wheat, 445

rabbit, *586*, *588*, 601
Raphanus raphanistrum, 241
recombination, by breakage-reunion, bacteria, 105
during bacterial conjugation, 117
in enzyme-deficient phage mutants, 755
intragenic, effect of FUDR and FU, 7
reciprocal, *E. coli*, 503
regulation by metabolite inhibition, yeast, 149
resistance, acridine, phage, 133
antiserum, rabbit cells, 601
analogues, Chlamydomonas, 405
nitrosoguanidine, 801
nitrous acid, 801
UV, 801
ribonuclease, Arabidopsis, 431
rye, *558*

Saccharomyes, *see* yeast
Salmonella typhimurium, 341, 463, *559*
sandhill cranes, *586*
scarlet runner beans, *550*
selection, and equilibrium, sex-linked alleles, 613
bristle number, Drosophila 39
copulation duration, Drosophila, 233
directional, 73
minimizing fitness, 705
on haplo- and diplophase, 693
venation, Drosophila, 709
sensitivity: *see* resistance
serotypes, Tetrahymena, 667, 683
sex ratio, deviant, 189
sheep, 353
sialic acid differences, 425
somatic segregation, Neurospora, 771
Sordaria fimicola, *571*
spermatogenesis, in sex-ratio, *D. simulans*, *189*
stock list, *A. nidulans*, 619
"Suicide" P^{32} decay, bacterial chromosome, 105
super-suppressors, yeast, 641
suppressor of tumors, Drosophila, 743

suppressors, multisite, yeast, 641

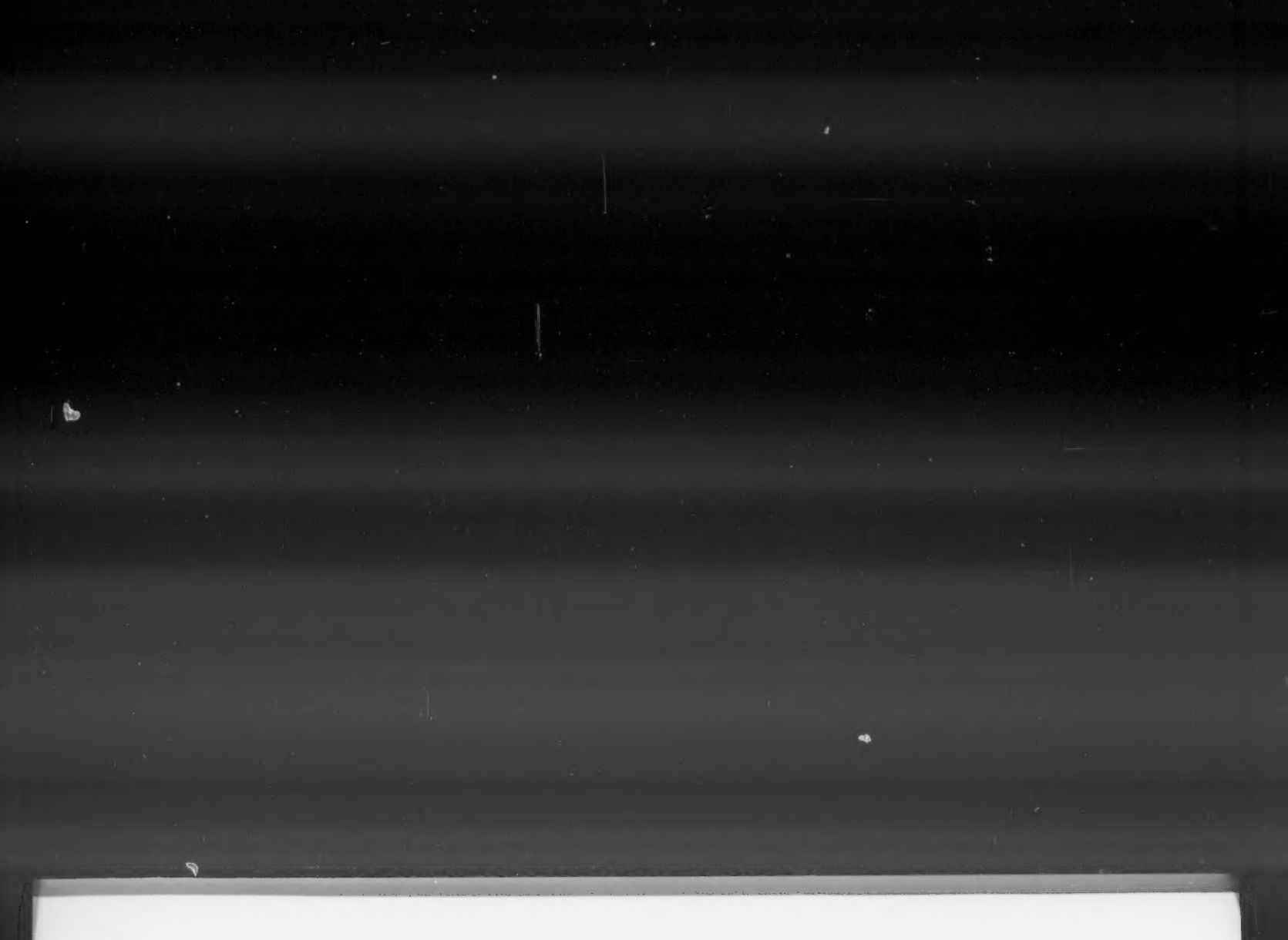
Tetrahymena, 667, 683
tobacco, 483, *544*, *586*
tomato, 227, 297, 391
Tradescantia, *576*
transduction, 363
transferrin, 425
transformation, antigen type, Paramecium, 793
translocation, X-ray induced, Drosophila oocytes, 265
transposition, *E. coli*, 503
Tribolium castaneum, *546*, *554*, *588*, 633
Trichoplusia ni, *588*
trisomics, tomato, 297
tumor, melanotic, Drosophila, 743
turkey, 353, 727

ultraviolet irradiation, 801
ultraviolet-sensitive mutants, Neurospora, 801
unstable revertants, *E. coli*, 331

variegation, chloroplast, Arabidopsis, 431
tobacco,, 483
virus, fowl pox, and parthenogenesis, 727

wheat, 445, *544*

X-irradiation, 265, 375

Y-chromosome function, *D. hydei*, 283
yeast, 149, *544*, *554*, *568*, *571*, 641

Zea mays, *see* maize